Abstract

The object of the present invention is to provide organs for transplantation to open a way to innate kidney diseases or the like of higher organisms by establishing protocol of in vitro induction of organs and in vivo transplantation by means of development engineering or organ engineering to evaluate whether the in vitro induced organ can actually function in vivo. The object of the present invention will be attained by preparing organs for transplantation capable of functioning in vivo when transplanted following culture of in vitro induced kidney, heart, pancreas, lever or enteric canal or the like up to certain stages corresponding to the stages of the recipients of the same species in the presence of TGF-β family such as activin or the like. The stages can be examined by using genome DNA, whose expression corresponds to the stage of the in vitro induced organ, as a molecular marker.